ANALYSIS OF PANEL COUNT DATA MODEL FOR MALAYSIAN ROAD ACCIDENTS

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Contents

1. Letter of Report Submission

Tarikh : 12 September 2012
No. Fail Projek : 600–RMI/ST/DANA 5/3/Dst (156/2009)

Penolong Naib Canselor (Penyelidikan)
Institut Pengurusan Penyelidikan (RMI)
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SELANGOR

Y. Bhg. Prof.,
LAPORAN AKHIR PENYELIDIKAN DST: ANALYSIS OF PANEL COUNT DATA MODEL FOR MALAYSIAN ROAD ACCIDENTS

Merujuk kepada perkara di atas, bersama-sama ini disertakan 2 (dua) salinan naskah laporan akhir penyelidikan bertajuk 'Analysis of Panel Count Data Model for Malaysian Road Accidents'.

Sekian, terima kasih.

Yang benar,

PROF. MADYA DR MOHD ALIAS LAZIM
Ketua
Projek Penyelidikan

2. Letter of Offer (Research Grant)

UNIVERSITI TEKNOLOGI MARA

PEMENANG Anugerah Kualiti Perdana Menteri 2008

Rujukan Kami : 600-RMI/ST/DANA 5/3/Dst (156/2009)
Tarikh : 20 Januari 2010

Prof. Madya Dr Mohd Alias Lazim
Ketua Projek

Prof. Madya Yap Bee Wah
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Pn Wan Fairos Wan Yaacob
Ahli Projek

Fakulti Sains Komputer dan Matematik
UiTM SHAH ALAM

Tuan/Puan

KELULUSAN PERMOHONAN DANA KECEMERLANGAN FASA 03/2009
TAJUK PROJEK : *ANALYSIS OF PANEL COUNT DATA MODEL FOR MALAYSIAN ROAD ACCIDENTS*

Dengan segala hormatnya perkara di atas adalah dirujuk.

Dengan sukacitanya, Institut Pengurusan Penyelidikan (RMI) mengucapkan tahniah kepada tuan/puan kerana telah berjaya ditawarkan Geran Dana Kecemerlangan bagi projek penyelidikan tersebut tertakluk kepada syarat-syarat dalam lampiran.

Tempoh projek penyelidikan ini ialah dua (2) tahun, iaitu bermula **01 Januari 2010** hingga **31 Disember 2011.** Peruntukan yang diluluskan ialah sebanyak **RM12,000.00** sahaja bagi **Kategori D.** Tuan/puan diminta mengemukakan kertas cadangan penyelidikan beserta bajet yang baru seperti yang dicadangkan dan bersesuaian dengan jumlah kelulusan yang telah diluluskan.

Sekian, harap maklum dan terima kasih.

"SELAMAT MENJALANKAN PENYELIDIKAN DENGAN JAYANYA"

Yang benar

MUSTAFAR KAMAL HAMZAH
Ketua INFOREC
Merangkap Ketua Penyelidikan (Sains dan Teknologi)

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2. Puan Rosnani Abdul Razak, Penolong Bendahari
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5. Report

5.1 Executive Summary

The most common probability models for modeling count data are those based on the traditional Poisson and Negative Binomial assumption usually developed on individual basis. On the other hand, this research focused on modeling procedure using panel data analysis approach. The fixed-effects Poisson and Negative Binomial (FENB), random effects negative binomial (RENB) model and the cross-sectional negative binomial (NB) model were examined in order to take into account for heterogeneity in the accident data on a panel of 14 states in Malaysia covering the period of 1996 to 2007. We examined various factors associated with road accidents occurrence. It is hypothesized that the factors considered to affect road accidents are the monthly registered vehicle within the state, the amount of rainfall, the number of rainy day, time trend and the monthly seasonal effect. Various model specifications were estimated including the pooled Poisson, Fixed and Random Effects Poisson as well as Fixed and Random Effects Negative Binomial model. The results showed that road accident occurrences are positively associated with the increase in the number of registered vehicle, increase in the amount of rain and time of the occurrence. The effect of seasonality also indicates that accident occurrence is higher in the month of October, November and December. The models developed confirmed the factors identified that have effect on the number of road accidents in Malaysia. The specification comparisons also indicate the benefits gained from using the NB model with spatial and temporal effects. The RENB model was found to be more superior when incorporated temporal and cross sectional variations which offers advantages in model flexibility.